

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Ulrich Carlin Nielsen
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Title : METHOD AND ARRANGEMENT FOR PORTION CUTTING
OF FOOD ITEMS, AND USE OF A CUTTING DEVICE IN THE
ARRANGEMENT

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TC/A.U. : 3724
Examiner : Laura Michelle Lee

Customer No. : 00116
Docket No. : SCAN1-41253

Commissioner for Patents
Alexandria, VA 22313-1450

PreAppeal Review Remarks “F”

The claims were rejected under 35 U.S.C. 102(b) as being anticipated by Hicks (U.S. 6,549,823), or as being unpatentable over Hicks alone, or in various combinations of other references including Vogeley (U.S. 5,937,080) and Rosenberger (US 2002/0035905). For the following reasons, the rejections are respectfully traversed.

The Examiner relies on Hicks for all of the rejections, referring to various portions of Hicks that the reference itself fails to describe as being provided in any single embodiment.

The embodiment shown in Hicks’ figure 1 is prior art and described in col. 1, line 45, to col. 2, line 12 (note the section heading “PRIOR ART” at col. 1, lines 43/44 and the description of Fig. 1 at col. 5, lines 17-19 as being of a “known cutting system”). The Examiner relies extensively on passages from this prior art section for her rejections, but improperly combines this prior art with the Hicks disclosure in a manner that is not suggested by the reference, and thus cannot anticipate the claimed subject matter. In the §102 rejection of independent claim 41, the Examiner combines this prior art

embodiment with one of the Hicks-embodiments, as she cites col. 2, lines 54-58 in combination with the teachings of the prior art cited above. This is clearly an improper §102 rejection, as the reference does not teach such a combination, and thus the Examiner must rely on some outside motivation or teaching for making such a combination.

The prior art embodiment disclosed by Hicks in the abovementioned sections and figure 1 relates to an automated system for cutting cheese blocks into portions according to dimensional criteria. The process is straightforwardly described in the Prior Art section and in accordance with Fig. 1. First the height (H) and width (W) of the cheese block is measured and the cutting up in 2 dimensions is planned (horizontal and vertical-longitudinal). The planned cutting is carried out, which results in the block being cut into strips. The block of strips is then turned 90 degrees, and the length (L) of the strips measured (which corresponds to the length of the original block, and which because of the turning is now the width of the block of strips relative to the conveying direction). With the knowledge of the 3rd dimension now obtained, the last cutting step is planned, and the strips are cut into the desired portions.

As seen from the above description, Hicks' prior art determines a first cutting profile for the cutting into strips based on measurements of 2 dimensions, and then, after having performed the cutting in accordance with the first cutting profile, a second cutting profile for the cutting into portions based on measurement of the 3rd dimension is determined and carried out.

In other words, Hicks' prior art does not anticipate, cited from claim 22, that the step of determining a portion-cutting profile at the first cutting stage" in any way

comprises determining a *predetermined* dimensions and/or weights for the cutting-up of said food item *into said strips* **and** for the cutting-up of said strips *into said substantially rectangular pieces*, on the basis of said at least one of a shape, a structure and/or a dimension of said food item *scanned at the first cutting stage* and on the basis of said predetermined weight and/or dimensions.

(emphasis added). When comparing the claim language with regard to Hicks, Hicks (referring to the prior art) does not in col. 1, line 45, to col. 2, line 12, anticipate that the

first portion-cutting profile is based on the measurements made before the first cutting stage regards to *both* the “item-to-strips” and the “strips-to-pieces” cutting steps.

This is in contrast to the cited feature of claim 22, that the machine right from the beginning takes the entire cutting process into account for both of the two cutting stages prior to performing any of the cutting steps. There may be several possible dimensions of strips that could be cut from a certain food item, and the best possibility is chosen by considering which of these different strip dimensions would yield the best results in the strips-to-pieces cutting step. The measuring step at the second cutting stage is then used to update the profile to adapt to changes, such as in orientation that might occur during transport, for example.

It is possible that the advantages of the present invention are not perfectly clear when comparing to cheese block cutters, as the cheese blocks as admitted by Hicks are generally regular and predictable. That only makes sense if Hicks expects the next cheese block to be equivalent to previous blocks. But when cutting food items of arbitrary or non-regular shape, such as e.g. chicken breasts, it is clear that planning the entire cutting process before starting out will enable better results than by only planning one cut at a time, and then see (and be restricted to) what possibilities remain for the next cutting. Thus, the problem of the current application is not typically present, and thus not known, for the cheese cutting of Hicks. Thus, the Hicks’ prior art doesn’t plan the entire cutting process based on the first measurement only, and has no motivation to do so.

Regarding Hicks’ own embodiments, we note the following:

A first embodiment is described from col. 5, line 37 with reference to Fig. 2 and 3. In this embodiment, the height is first measured (lines 54-58) and the block is cut horizontally (lines 61-63). Then the width is measured (col. 6 lines 1-4), and layered block is cut into strips (lines 5-10). Then the length of the strips is measured (lines 14-16), and the strips are cut into portions. This embodiment does not anticipate a portion-cutting profile for both the items-to-strips *and* the strips-to-pieces based on the measurements made before cutting into strips, but instead clearly requires the additional measuring steps to complete such a profile.

The alternative embodiment described in col. 6, lines 31 – 44, refers to the prior art of Fig. 1 where the first two measurements (height and width) are made before any cutting, and both the block-to-layer and layer-to-strips cuttings are planned based on these measurements and done at the same cutting stage (thereby combining the first and second cutting stages), but this embodiment does not anticipate claim 22, as the first cutting profile still doesn't relate to the final strips-to-pieces cutting step, which still requires an additional measuring step to determine.

Col. 6, lines 45 – 51, discloses a further alternative where also the length of the strips is measured before the first cutting step, as that length is in fact simply the length of the original block. However, in this alternative embodiment Hicks has moved all measurements to the first stage, and does not disclose any, cited from claim 22, “additional scanning of at least one of a shape, a structure and/or a dimension of the strips at the second stage”. Thus, in this case, Hicks cannot adjust for any changes in orientation that occur in transport, for example.

Hicks states in col. 7, line 61, to col. 8, line 7, that the control processor can determine the cut geometry as a whole on the basis of a “global” assessment of the block, and that the knowledge that the strips are to be cut into portions of known target weight is taken into consideration already when planning the cutting into strips. At best, this refers to the embodiment where all measurements are done at the first stage, in which case there is no additional measurement at subsequent stages (in which case the claims cannot read on that embodiment). This cannot apply to the embodiments where missing dimensions are only taken at a later stage, as insufficient information would be available to do such an assessment, or such an assessment would instead be based not on actual measurements, but on prior knowledge about the cheese block, and thus not based on the measurements as required by the claims.

An attempt to render claim 22 obvious by combining the different alternatives disclosed by Hicks to anticipate both “global” assessment at the first stage and additional scanning and planning at the second stage, is not relevant as Hicks presents these as merely design alternatives with no complementary advantages and no suggestion to combine them, so one would have no reason to expect any synergetic effect of

implementing both alternatives in the same machine. On the contrary, that would seem redundant and unnecessarily complicated as they are described as alternatives to obtain the same result, and Hicks instead clearly intends to eliminate such redundancy, and thus teaches away from any such combinations. However, in the present invention, as defined by claim 22, the combination of the first measurement and planning of the entire cutting process before any cutting is carried out, combined with the additional measuring and planning between the two cutting stages, does in fact foresee the unexpected problem that the first cutting stage may not always produce strips exactly as planned, or the strips may move on the conveyor system before reaching the second cutting step, and the present claimed features therefore yield the surprising effect that, citing from the current application page 4, lines 2–4, “it is herewith possible to verify or correct the first measurement from the first cutting device for a possible alteration of the cutting profile for the additional cutting device(s)”.

The above reasoning also applies to claim 41. Thus, the Examiner should withdraw the rejection of claims 22 and 41 for at least these reasons.

In consideration of the foregoing analysis, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. SCAN1-41253.

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Respectfully submitted,

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